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10/595,441	04/19/2006	Pierre Beteille	171.004	9671
38245 7590 09/28/2007 JEROME D. JACKSON (JACKSON PATENT LAW OFFICE) 211 N. UNION STREET, SUITE 100 ALEXANDRIA, VA 22314			EXAMINER CADUGAN, ERICA E	
			ART UNIT 3722	PAPER NUMBER
			MAIL DATE 09/28/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/595,441	<b>Applicant(s)</b> BETEILLE, PIERRE	
	<b>Examiner</b> Erica E. Cadugan	<b>Art Unit</b> 3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because it contains legal phrasing such as “means” or “said”. Correction is required. See MPEP § 608.01(b).

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the frame that is “internally laid out in a manner to create a cooling liquidation circuit” and the “cooling liquidation circuit” of the same limitation of claim 5; the “cutting fluid” set forth in claim 6; the direct drive motor “for each bearing” set forth in claim 7 (note that the drawings only show a direct drive motor 300 for one (210) of the bearings); “the accumulator” of claim 10; and the “breaking means” of claim 11 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet”

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance:

***Specification***

3. The disclosure is objected to because of the following informalities: noting that the described “breaking means” are described as being in the form of a “disk brake” in paragraph 0064, it appears that the term “breaking means” (multiple occurrences throughout paragraph 0064) should be changed to --braking means--.

Appropriate correction is required.

***Claim/Specification Observation***

4. It is noted that claim 1 sets forth that the workpiece holding device D is provided with a transversal rotation axis “in relation to the tool downward axis of a machining tool (M)”. It is noted that as viewed in Figure 1, the “downward” direction of the tool O of the machining tool M is the downward Y direction. However, it is noted that as described in the specification in at least paragraph 0043, the Z (horizontal) axis is referred to as the “downward axis” of tool O. It is noted that the rotation axis of the workpiece holding device D extends in the X direction and is thus transverse relative to either one of the Y or Z directions, and thus, there isn’t technically anything contrary to the specification in stating that the rotation axis of the tool is transverse relative to a downward axis of the tool. However, Applicant may wish to resolve the inconsistency noted above with respect to the meaning of the term “downward” in either or both the specification and claims.

***Claim Objections***

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5. Claims 8 and 11 is objected to because of the following informalities: the limitation “support plane” in lines 1-2 of claim 8 lack a modifying article such as “a”; in claim 11, it appears that the limitation “breaking means” should actually be --braking means--. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There are several positively recited limitations that lack sufficient antecedent bases in the claims. A few examples of this are: “the tool downward axis” in claim 1, line 2; “the ends” in claim 1, line 6 (note that the table has more than two ends, and that not all of them are configured as claimed); “the receiving plate” in claim 3, last line; “the receiving plate” in claim 4, last two lines; “the axis of rotation” in claim 8, lines 2-3; “the shafts” in claim 8, line 3; “their ends” in claim 8, line 3 (note that it is also unclear to what “their” ends refers, i.e., whose ends?); “the lever arm” in claim 9, line 3, “the piece” in claim 9, last line; “the direct drive motor” in claim 12, lines 1-2; “the piece” in claim 12, line 2, “the machine” in claim 12, last line [Examiner suggests changing “the machine” to --a tool (O) of the machining machine tool (M)-- for clarity]. This is not meant to be an all-inclusive list of such occurrences. Applicant is required to review the claims and correct any other such occurrences of limitations lacking sufficient antecedent basis.

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In claim 1, line 3, it is unclear as set forth in the claim to what item or structure the term “it” refers.

As set forth in claim 1, penultimate line, it is unclear, via the lack of a modifying article, whether “two rotational guiding bearings” are intended to be the same as or different from the “two bearings for rotational guiding” previously set forth in the claim. If, as it appears, they are intended to refer to the same bearings previously set forth, Examiner suggests inserting --the-- or --said-- prior to “two rotational guiding bearings” in the penultimate line of claim 1 for clarity.

Firstly, it is unclear what axis or frame of reference is being referred to by the term “axial” in the limitation “axial forces” in the last line of claim 1. Note that claim 1 sets forth two different axes -- a transversal rotation axis of the workpiece holding device and a tool downward axis, and it is unclear which, if either, of these axes is referred to.

Secondly, it is unclear what axial “forces” are being taken “into account” in the limitation “arranged to take into account axial forces” in claim 1, i.e., “axial forces” of what?

In claim 7, line 1, it is unclear to what “it” refers.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4 and 7-12, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by either of U.S. Patent Application Publication No. 2003/0053875 to Pasquetto or EP 1285721 to Pasquetto.

It is noted that both of these references are currently available as prior art under 35 USC 102(b) as they were both published more than one year prior to the effective filing date (October 21, 2004) of the present application (noting that no certified translation of the French priority document has been made of record).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Further note that even if such a certified translation is made of record, it alone will not overcome the Pasquetto references, noting that U.S. 2003/0053875 will still be applicable under 35 USC 102(e) based on its filing date of August 20, 2002, and that EP 1285721 will still be applicable under 35 USC 102(a) based on its publication date of February 26, 2003.

Both of the above-listed Pasquetto references are in the same patent family. Thus, with respect to the following description of what Pasquetto teaches, only the U.S. published application will be referred to with paragraph numbers, etc. However, it is noted that such description equally applies to the EP '721 Pasquetto references due to the references being in the same patent family.

Pasquetto teaches a "workpiece holding device" (see Figure 4) provided with a "transversal" rotation axis A in relation to the tool "downward" axis (either Z or Y would appear to qualify as such in light of the present specification) of a machining tool unit 5 (see Figure 4, for example). The workpiece holding device includes a "frame" including frame portion 2 (see at least Figure 3) and supporting columns 18, which supporting columns 18 each support a "bearing" 16 and/or seat 17 (noting that no specific kind or type or structure of the "bearing" is

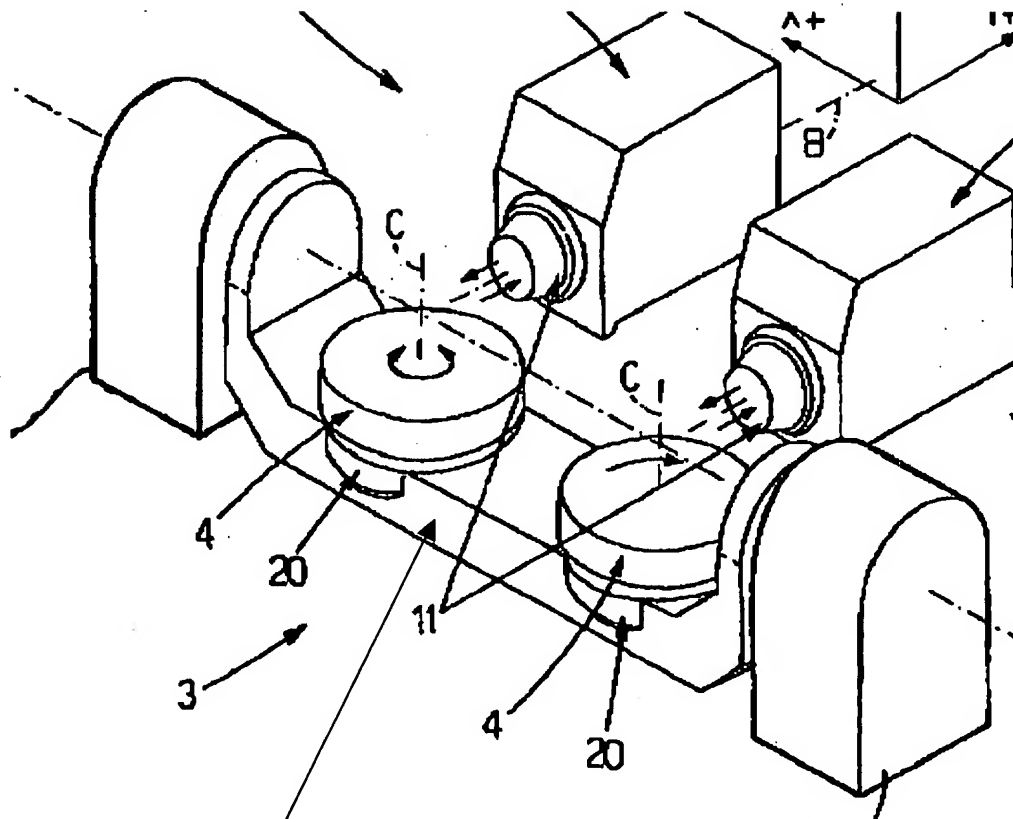
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claimed) (see at least Figure 5 and paragraph 0029, for example) for “rotational guiding according to the aforementioned transversal rotation axis” A. Note that the structure formed by the “frame” including at least elements 2, 18, and 18 and the two bearings 16 and/or 17 is “closed” by rotatable worktable 3 (see Figures 4-5). Note that the ends of the worktable 3 are “coupled” to the two bearings 16 (see Figure 5), and that they are considered to be “removably” coupled in that they are inherently “able” to be removed therefrom, e.g., via the use of tools. Furthermore, the bearings are arranged to “take into account” (as broadly claimed) forces along various axes, such as along the X, Y, or Z axes, for example. Note that if the bearings were not arranged to “take into account” such forces, the workpiece holding device would fall apart upon the application of forces thereto during a machining operation by the devices 5.

Re claims 2 and 7, note the provision of “direct drive” torque motors 21, each “integrated” with a respective one of the bearings (see Figure 5 and paragraphs 0029-0033, for example). Further re claim 7, note that if the control of the motors was not “synchronized”, the table 3 would be torn apart when one motor 21 was actuated out of synchronization with the other, i.e., via the application of torque in the wrong direction (one motor actuated in one direction and one in the other) or via the application of torque at one motor and not the other, or via the application of significantly different torque at one motor than at the other. In other words, to achieve the amount of rotation desired to achieve precision machining, it is considered inherent that the two motors are “synchronized” (see also paragraphs 0031-0033, for example).

Re claim 3, see the partial reproduction of Figure 4 labeled below, and also note that platforms 4 can be considered “receiving plates” as broadly claimed.





Example of a portion of the table 3  
that can be considered a  
“rigidification beam”

Re claim 4, note that the bearings 16 and/or 17 each support and guide a rotatable shaft 15 (see at least Figure 5). Note also that these shafts 15 each “have”, by virtue of their fixed connection to table 3, a “support and connection surface” for the “receiving plates” 4.

Re claim 8, see Figures 4-5, for example, noting that the “support plane” of the table 3, i.e., the upper plane thereof as viewed in Figures 4-5, is “shifted” or offset with respect to the rotation axis A of the shafts 15.

Re claims 9-10, note that Pasquetto explicitly teaches the use of a “compensating means” 23 each including a hydraulic piston 24 (coupled to an “accumulator” 25) provided “coupled” to

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each of the “bearings” 16 and/or 17 (see Figures 1, 5, paragraphs 0035-0038, for example) to provide a compensating force “adapted to the lever arm” formed by the rotatable table 3 (see Figure 5 and paragraphs 0035-0038).

Further specifically re claim 10, note that Pasquetto teaches that the “accumulators” 25 serve to regulate the pressure to and from the pistons 24 as a function of the angular position of the table, and thus “according to the lever arm” formed thereby (see paragraph 0037, for example).

Re claim 11, each “bearing” 16 and/or 17 is “equipped” with a “braking means” (as best understood) in the form of braking devices 22 (see Figure 5 and paragraphs 0031 and 0034, for example).

Re claim 12, note that workpieces are supported on the work table 3 via at least platforms 4, and that movement with respect to the various axes, including movement of the table 3 about axis A is controlled during a machining operation to produce a desired workpiece (see at least paragraphs 0048, 0003, and 0002, for example).

10. Claims 1-4, 8-9, and 11-12, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. App. Publication No. 2002/0006764 to Hanisch et al.

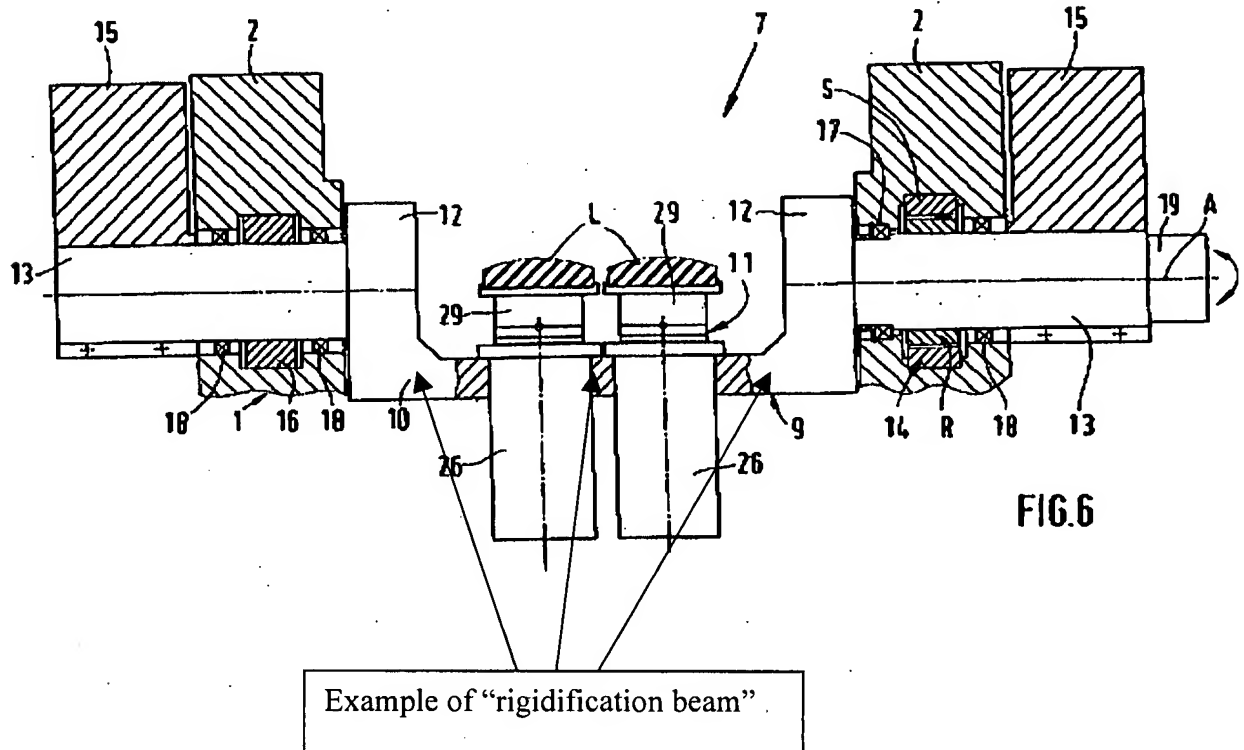
Hanisch et al. teaches a workpiece (L) holding device provided with a “transversal rotation axis” A (see Figures 1-3 and 6) in relation to the “tool downward axis” Z (see Figure 1). The device includes a “frame” supporting multiple bearings 18, 18, 17, and 18 (see Figure 6, for example) for “rotational guiding according to the aforementioned transversal rotation axis” A. The structure formed by the “frame” and the bearings is “closed” by a rotatable worktable (such as the “worktable” including portions 9, 10, and 12, for example, see Figure 6). The ends of the

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rotatable worktable are coupled to two of the rotational guiding bearings 18, 18, 17, 18 at end portions 13, and they are considered to be “removably” coupled in that they are inherently “able” to be removed therefrom, e.g., via the use of tools. Furthermore, the bearings (and/or the “ends” of the table) are arranged to “take into account” (as broadly claimed) forces along various axes, such as along the X, Y, or Z axes, for example (see Figure 1). Note that if the bearings and/or table ends were not arranged to “take into account” such forces, the workpiece holding device would fall apart upon the application of forces thereto during a machining operation by the tools held by tool spindles 8.

Re claim 2, note the provision of the direct drive torque motor 14 having rotor R and stator S on the right side of Figure 6 (see Figure 6, see also paragraph 0026).

Re claim 3, see the reproduction of Figure 6 below, noting that the upper portion of element 29 can be considered a “receiving plate”, for example.



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Re claim 4, noting that claim 4 also depends from claim 1, note that two rotatable shafts 13 are guided by the bearings 18, 17, 18, 18, and each shaft has a "support and fixation surface" (such as, for example, the vertical innermost surface thereof) for attachment of portions 12 of structure that can alternatively be considered the "receiving plate" as broadly claimed.

Re claim 8, see Figure 6, noting that the upper surface of the horizontal table portions 9, 10 is offset or shifted with respect to the axis A of rotation of the shafts 13 to which the ends of the table are coupled.

Re claim 9, note the provision of counterweights 15 to "compensate" the forces generated by the members 9 and 11 (see Figure 6 and paragraph 0027).

Re claim 11, note that the bearings on the left (as shown in Figure 6) are equipped with "breaking means", as best understood, in the form of brake 16 (see Figure 6 and paragraph 0028, for example).

Re claim 12, see at least paragraphs 0038-0040, noting the shapes of the workpieces machined by the device, and noting that based on the CNC control axes which the machine has, that the device taught by Hanisch is capable of so functioning.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. Claims 5-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over either of U.S. Patent Application Publication No. 2003/0053875 to Pasquetto or EP 1285721 to Pasquetto as applied to at least claim 1 above.

Pasquetto teaches all aspects of the presently-claimed invention as set forth above, but does not explicitly teach that the “frame” including at least 2, 18, and 18 is “internally laid out in a manner to create a cooling liquid circulation circuit” as set forth in claim 5, nor that such uses as its cooling liquid the “cutting fluid used by the machine tool” as set forth in claim 6.

However, Examiner takes Official Notice that the use of an internally laid out cooling liquid circulation circuit in a machining frame, that uses the cutting fluid of the machine tool as its cooling liquid, is well-known in the art, and has the well-known benefits of providing cooling to the frame so as to prevent overheating of moving parts thereof, thus preventing distortion due to the excessive heat, and doing so using a liquid that is readily available since it is already of use in the machine.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the frame taught by Pasquetto with an internally laid out cooling liquid circulation circuit that uses the cutting fluid used by the machine tool as its cutting liquid as is known in the art for the purpose of achieving the well-known benefits of providing cooling to the frame so as to prevent overheating of moving parts thereof, thus preventing distortion due to the excessive heat, and doing so using a liquid that is readily available since it is already of use in the machine.

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13. Claims 5-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over either of U.S. Patent Application Publication No. 2002/0006764 to Hanisch et al. as applied to at least claim 1 above.

Hanisch et al. teaches all aspects of the presently-claimed invention as set forth above, but does not explicitly teach that the “frame” is “internally laid out in a manner to create a cooling liquid circulation circuit” as set forth in claim 5, nor that such uses as its cooling liquid the “cutting fluid used by the machine tool” as set forth in claim 6.

However, Examiner takes Official Notice that the use of an internally laid out cooling liquid circulation circuit in a machining frame, that uses the cutting fluid of the machine tool as its cooling liquid, is well-known in the art, and has the well-known benefits of providing cooling to the frame so as to prevent overheating of moving parts thereof, thus preventing distortion due to the excessive heat, and doing so using a liquid that is readily available since it is already of use in the machine.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the frame taught by Hanisch et al. with an internally laid out cooling liquid circulation circuit that uses the cutting fluid used by the machine tool as its cutting liquid as is known in the art for the purpose of achieving the well-known benefits of providing cooling to the frame so as to prevent overheating of moving parts thereof, thus preventing distortion due to the excessive heat, and doing so using a liquid that is readily available since it is already of use in the machine.

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14. Claim 7, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. Application Publication No. 2002/0006764 to Hanisch et al. as applied to at least claim 1 above.

Hanisch et al. teaches all aspects of the presently-claimed invention as set forth above, but only mentions one torque motor 14, and does not explicitly teach the use of a second direct drive motor synchronized with the first.

However, Examiner takes Official Notice that it is well-known in the art to use a second synchronized direct drive motor on the opposite end of a rotary member, i.e., such as one at one shaft 13 and another at the other end of the rotating body (i.e., the end of the other shaft 13), for the purpose of providing additional torque to move a heavy load, for example.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a second synchronized direct drive motor at the other shaft 13, as is well-known in the art, for achieving the well-known purpose of providing additional torque, thereby enabling Hanisch's device to process heavier workpieces, for example.

### ***Conclusion***

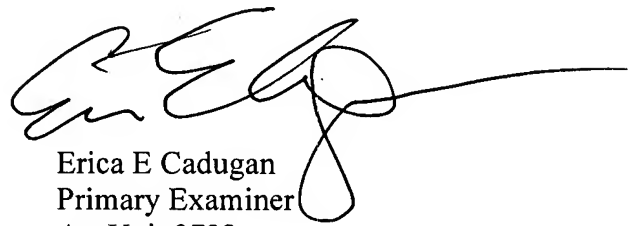
15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E. Cadugan whose telephone number is (571) 272-4474. The examiner can normally be reached on M-F, 6:30 a.m. to 4:00 p.m., alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Erica E Cadugan  
Primary Examiner  
Art Unit 3722

eec  
September 24, 2007